



POTENTIAL OR ACTUAL HARM: DISPUTE OVER EFFLUENT DISCHARGE REQUIREMENTS

No indication federal interpretation improves water quality

One shot. That's all you get. If you pass, you get to continue. If you fail, it's going to cost you. That is the basis of a long-running dispute between the TCEQ and the EPA over discharge permits for industrial and public wastewater treatment systems.

Whole effluent toxicity testing (a.k.a. biomonitoring) measures the potential total toxic effect of effluent discharge into a receiving water body. WET testing is performed by introducing live organisms into mixtures of effluent and receiving water at concentrations designed to mimic the conditions occurring instream as the discharge mixes with the receiving water body.

Two Differing Approaches

It sounds simple: expose the water flea, fathead minnow, mysid shrimp, or inland silverside to a mixture of effluent and water over a specified period of time and note the adverse effects, if any. However, it's not that simple: there are variables in the viability of the organisms used, there is possible toxicity from sources

other than the discharge in question, and there are occasional lab errors. Just as an unusual finding in a lab test at the doctor's office means that another test is needed to make sure that the first one was not an anomaly, current TCEQ procedures require additional testing to confirm toxicity and then studies, known as Toxicity Reduction Evaluations, to identify and address the source of the problem before establishing permit limits.

The EPA has a different view of the federal regulations, at [40 CFR 122.44\(d\)\(1\)\(i\)](#), which require that discharges be evaluated for the reasonable potential to cause toxic effects to aquatic life within the receiving water body. The federal agency's preferred approach to determining reasonable potential is based on statistical probability as outlined in its 2004 WET draft guidance document. The EPA's preferred methodology yields a finding of reasonable potential (i.e., requiring WET permit limits) when just *a single* test result shows even minimal adverse effects on growth or reproduction in the test organism. The EPA wants to place these limits based on the potential

A contract lab technician cleans chambers on a fathead minnow test (contractor: Atkins).

Photos courtesy of Atkins

to cause harm, rather than using a weight-of-evidence approach, based on actual monitored results, as the TCEQ proposes. The EPA has not demonstrated that an occasional test that produces an effect on growth or reproduction reflects an actual impact to aquatic life within the receiving water body.

In the last year, the TCEQ has made tremendous progress toward overcoming EPA objections based on their preferred methodology, but the fact remains that the two agencies do not agree and that there are still permits, with one or two failures, that are being disputed. The EPA is requiring a limit where the TCEQ is not. The only choice for permittees is to accept the EPA's requirement for a limit or run the risk of having their permit federalized by the EPA. So far, permittees have generally accepted the limits. The San Jacinto River Authority is the exception. They declined the limit and their permit was federalized by the EPA in 2006. That permit has yet to be issued because of a remand back to the EPA by the Environmental Appeal Board due to an EPA error in interpreting Texas water quality standards and the SJRA is still fighting the limit.

Potential vs. Actual Harm

At times, the dispute over methodology has put more than 30 permits under an EPA objection. Most of these pertain to cities, municipalities, and municipal utility districts that will have to pay for additional equipment and/or treatment based on a potential for problems rather than on actual water quality problems. In many cases, the additional costs will be passed on to taxpayers and ratepayers and the expenditures will not result in significant improvements in water quality. Also in many cases, while a permit was stalled over the EPA objection, the TCEQ was unable to issue a permit with more

stringent limits for other parameters, such as bacteria.

Although the EPA objections have been withdrawn for a large number of these permits, the gridlock continues over the issue of a single test failure having the force to compel the placement of a limit in a permit for whole effluent toxicity. Over the last four years, the TCEQ has proposed numerous options to satisfy the reasonable-potential requirement related to WET limits, without agreement from the EPA. The EPA insists that their guidance documents be strictly adhered to by the TCEQ, even though the EPA itself often sees fit to overrule them. The draft guidance document is not codified into EPA rules. The EPA's view is that national consistency demands that the draft guidance be used in Texas as if it were rule. The TCEQ continues to insist that the states are entitled to flexibility to develop their own methodologies as long as these methodologies are scientifically defensible.

At the heart of the matter is the TCEQ's [*Procedures to Implement the Texas Surface Water Quality Standards \(RG-194\)*](#). These implementation procedures, last approved by the EPA in 2003, did not require the use of the EPA's 2004 draft guidance document to determine reasonable potential of whole effluent toxicity. In 2010, the commission adopted new implementation procedures, committing itself to performing analyses of reasonable potential based on an evaluation of representative data from a permittee's previous five years of WET testing, as well as on additional factors such as duration and magnitude of any test failures. If the TCEQ determines, after using this weight-of-evidence approach,



Photo courtesy of Atkins

A contract lab technician observes cultured organisms as part of WET testing.

that a problem exists, WET limits will be added to the permit.

A Way Forward?

The EPA has made it clear that it still wants a one-size-fits-all approach for granting permits to facilities. The TCEQ advocates flexibility based on the facts inherent in the individual water bodies and facility operations, where more stringent controls are imposed when the facts support doing so. The TCEQ Water Quality Division has engaged stakeholders again in an effort to revise its implementation procedures relative to determinations of the reasonable potential of whole effluent toxicity. These revised procedures will again be presented to the commission for approval. If they are approved, the TCEQ will present the revised version to the EPA to see if approval can be obtained without having to accept the one-size-fits-all, one-strike-and-you're-out methodology.

The TCEQ is committed to protecting the state's natural resources by focusing the agency's limited resources on real problems rather than on the EPA's phantom possibilities. The agency urges the EPA to approve the pending permits and to consider favorably the revised implementation procedures once presented. That will allow the TCEQ to effectively protect the state's waters without undue burden to Texas communities. 🌱



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